to see more clearly the aims of modern education and judge more accurately how well our studies and methods are suited to the attaining of those ends.

Since to present clearly the historical facts that reveal education as a phase of the history of civilization is utterly impossible in a brief work designed for beginning students, it is the opinion of the present writer that the author of an introductory history of education is justified in overemphasizing the peculiarities of the ideals and practices of each nation in order to make the pictures more distinct. Dr. Graves is more careful than most such writers as to his historical facts but he fails as a literary artist in making the characteristics of each educational system stand out with sufficient distinctness to strongly impress elementary students. Considered in all respects, however, the book will rank high among histories of education.

E. A. KIRKPATRICK

FITCHBURG NORMAL SCHOOL, MASS.

The "Appleton" Arithmetics. Primary book. By J. W. A. YOUNG AND LAMBERT L. JACKSON. New York: D. Appleton & Co., 1909. Pp. 264.

"To teach arithmetic from the standpoint of the child," is the purpose this book sets itself. A broad purpose; indeed, is it very well possible in our days to *teach* anything from any standpoint, but that of the ones to be *taught?* The purpose is so broad, however, that further specification is necessary for a thorough understanding of the aim. What is the "standpoint of the child," with respect to arithmetic? Has it been clearly understood? What is there in the child's experience, that seems to call for arithmetic? In how far, or in what ways can arithmetic contribute to the unfolding and testing of the child's powers? Does it not seem necessary to answer these and many other related questions, in a somewhat definite fashion, before it can become clear, what we mean when we speak about the "standpoint of the child" with respect to arithmetic?

Perhaps the raising of these questions sends us out into terra incognita; at any rate, they open a broad field for scientific activity: to devise methods of investigation by means of which they may be adequately answered, to carry on such investigations in the classroom, and to put together manuals to be given to the children whose adaptability for arithmetic teaching we are trying to learn.

The *Appleton Arithmetics* are not intended for such purposes, however; they take for granted that the child's standpoint with respect to arithmetic is what it has generally been taken to be—eagerness to learn the fundamental processes on whole numbers and simple fractions, and their applications. They are "conservative, but not reactive. They represent what is sane in quality and safe in quantity for everyday classroom use under average conditions." They rather make fruitful use of the experience of the last ten years, then consciously try to gather new experience. They will contribute in a large fashion to bring into general application some of the things which have thus far been used by the people of advanced thought in education.

Every process, every idea is introduced by some "preparatory work," concrete in nature and intended to lead to an abstraction. Then follow, in many

instances, oral exercises, mostly abstract, and after those come written exercises in which the abstract work is dissolved in applications. Such an arrangement surely ought to work well. Only, I would like to see about five times as many exercises in the preparatory work before any abstract notion is introduced. Can we reasonably expect children in the second year to attach any meaning to an addition table such as is found on p. 5, after nine concrete exercises, all with one set of objects? Why not present at least four or five *different* concrete situations before making attempt at an abstraction? The purpose of this book is finally to enable the child to use the fundamental processes of arithmetic in *concrete* situations. Is it altogether certain, that this cannot be reached in any other way except through an ill-digested abstraction? Can such an abstraction be expected to be a good tool for the applications?

The first chapter containing subject-matter for the first two years deals with numbers through twenty; chaps. ii and iii, designed for the third year, work with numbers through one hundred and one thousand respectively; chaps. iv and v, giving the work for the fourth year, lead the child through one million and give an introduction to the operations with common and decimal fractions. The reviews are frequent and thorough. The applications to practical problems are numerous and interesting, sometimes artificial. Multiplication by any number is immediately followed by division by the same number. Could not a similar interweaving have been carried out with the other topics?

The book is clearly printed and looks very attractive. I do not know whether the illustrations are always adapted to a child's understanding.

ARNOLD DRESDEN

SCHOOL OF EDUCATION

First Course in Biology. Part I, Plant Biology; Part II, Animal; Part III, Human. By L. H. BAILEY AND W. M. COLEMAN. New York: Macmillan, 1908. Pp. 204; 224; 164. Illustrated. $1.25.

Books in so-called general biology have been added to by Professors Bailey and Coleman. This book is made up of three parts, Plant Biology, Animal Biology, and Human Biology. It is really three small courses, one on botany, one on zoölogy, and one on human physiology bound within the same covers, separately paged, the whole constituting further evidence that the term "biology" means very different things to different people. An attempt is not made to study a biological topic by use of illustrative materials from both plants and animals, including men, but rather to study characteristics of the three divisions entirely separately. Furthermore, as evidence that the authors do not conceive of the task that they have assumed as one in which biological problems are to be found primarily in a study of living plants and animals we may cite their chapter of preliminary experiments upon compounds, oxygen, and air, study of acid and alkaline substances, test for starch, for nitrogenous substances, and for fats and oils, making and liberating oxygen, etc. It would seem that these experiments in a general biological course should arise in connection with real problems associated with plants and animals.